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# DOWN UNDER CLUB


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A lot of things have been happening on our home front since last letter.

Firstly, it was decided that as only a few are coming to our meetings that we cease to hold them monthly, but will only hold them on request. In between times if anyone would like to have a discussion with me, then phone me and we can arrange a time mutually suitable. However there will be a meeting in JULY in order to judge the competition. Date in next issue

The second thing is that to replace Paul as our games editor, we have appointed TIM PENDLEBURY as games editor. Tim wrote the review of the 3 games in last edition, so you can see he is 'with it'. Also his brother MITCH will from time to time put in a sketch to lend weight to the column. You have seen a few of Mitch's sketch in issues past. Tim's address will be in the GAMES COLUMN. As I hold the High Scores list, it will be best if you send your scores to me. But if you are writing to Tim, you can send them in the same letter and Tim will send on to me.

Thirdly, Bob has let us have a comparison of the Z80 CPU as used in the VZ and the 80x86 as used in the IBM. I am sorry that Bob's printer shows up so much when put with mine, but I may see him about that. Still I suppose we can put up with non-matching printers. (Anyone like to donate an INK JET printer so we can keep up with the Joneses--------or Kitches).

I was going to say fourthly but I don't know that I can spell it. Still, see some interesting news about IBM compatiable computers inside. It may interest you.

Also David Wood advises that it was not my memory going off, but he had troubles with his cassette recorder. (comforting message)

And we have a mystery adventure game for you to get cracking on. The sexond half in next issue. You need memory expansion. 22K.
And don't forget I am looking for a contribution per member per year. Quite a few of you are leaving it to the willing horses to pull the load.

And lastly, if anyone has some IBM tips or news or questions, let us have them. There are quite a few of our members that have IBMs ( as backups), and I would guess that there will be more.

Harry

# VZ versus IBM
# or
# Zilog Z80 versus Intel 8088/8086 Microprocessors

**by Bob Kitch**

I was most interested in Harry's comments in the last VZDU concerning VZ Users and IBM compatible PC's. A number of Users have upgraded to PC's and have found that their experience on the VZ has been of tremendous help to them in getting to grips with MSDOS and Intel 16-bit microprocessors.

Harry's comments have prompted me to write a contribution comparing Assembly Language programming on the two machines. Some Users may be surprised by the degree of correspondence between the Z80 chip in the VZ and the Intel 8088/8086 used in PC's and XT class machines. The same degree of correspondence exists in the "super" processors of the AT class machines - the 16-bit Intel 80286 and 32-bit 80386/486. I guess what I am really saying is that, if you can program in Z80 Assembler then you are off to a good start in 8088/8086 Assembler. (There are very few PC users that understand 80x86 Assembler.) In this article I draw your attention to the similarities that exist between the two processors. For the VZ Users that cannot afford to upgrade to a PC, then plug away with Assembler as it will stand you in good stead!

## Z80 and 8088/8086 Programming Models

To compare the two processors, it is necessary to present a programming model for each device. A programming model defines the on-chip register set that is accessible to the Assembly language programmer. It gets down to the nuts-and-bolts level of the microprocessor.

The Zilog Z80 is an 8-bit (data bus) chip that can address 64K bytes (16-bit address bus) of memory directly. It also has 256 I/O ports and can run at around 4MHz clock speed. The 8086 is a 16-bit chip that can address 1M bytes (20-bit address bus) of memory. It can have up to 64K I/O ports and 10MHz versions are available. The 8086 is a significantly more powerful work horse. (Its brother, the 8088, has been "hobbled" as it only has an 8-bit data bus and is not all that more powerful than the Z80). Both the 8088 and 8086 have 16-bit registers on-chip. The Z80 is predominantly 8-bit although some of the registers are 16-bit on-chip.

Before explaining the similarities between the two chips, it is necessary to make some remarks upon the Segmented Addressing technique used on Intel microprocessors. How does a 16-bit processor develop a 20-bit address so that 1M byte of memory can be addressed? There is a set of 16-bit registers, referred to as Segment Registers, on the Intel processors. They have no counterpart on the Zilog chip. In addition, there is a set of 16-bit Offset Registers. Normally, the addition of

two 16-bit numbers (Segment Register + Offset Register) would only result in a 17-bit address. Intel evolved Segment Addressing to answer this problem. What happens on the chip is quite smart. The Segment Register is multiplied by 16. This process is equivalent to a Left Shift of 4 bits or moving left by one nibble. The Offset Register is added to this Segment to provide a 20-bit address.

eg. (calculation depicted in hex)

| | |
|---|---|
| Segment Register contains | SSSS (16-bit binary) |
| Offset Register contains | RRRR (16-bit binary) |

| | | |
|---|---|---|
| Calculation | SSSS0 | value of segment register shifted left by 4 bits |
| | +RRRR | value of offset register added |
| | ----------- | |
| | AAAAA | value placed onto address bus. (20-bit binary) |

A particular address in the 1M byte address space can be expressed either as two 16-bit values (Segment:Offset) or as a 20-bit number. For example, 1234:5678 or 179B8 are the same address. So is 1000:79B8 or 1200:59B8 - but that is getting too advanced!

Now let's look at the register set on the 8086 chip (all are 16-bit) -

General 8/16-bit Registers

| | | | | Z80 equivalent |
|---|---|---|---|---|
| AH | AL | AX | Accumulator | A-reg |
| BH | BL | BX | Base | HL-reg |
| CH | CL | CX | Counter | BC-reg |
| DH | DL | DX | Data | DE-reg |

Addressing (or Offset) Registers

| | | |
|---|---|---|
| SI | Source Index | IX-reg |
| DI | Destination Index | IY-reg |
| BP | Base Pointer | (none) |

Control Registers

| | | |
|---|---|---|
| SP | Stack Pointer | SP-reg |
| IP | Instruction Pointer | IP-reg |
| FLAGS | Flags | F-reg |

Segment Registers

| | | |
|---|---|---|
| CS | Code Segment | (none) |
| DS | Data Segment | (none) |
| SS | Stack Segment | (none) |
| ES | Extra Segment | (none) |

As this diagram shows, there is a surprising similarity between the two types of microprocessor. The main difference is the lack of segmented addressing on the Z80. Even the 16-bit registers on the Z80 have direct correspondents on the 8086. The chief differences are in the 8-bit Accumulator and Flag register on the Z80 - and these restrictions have a significant impact upon processor speed. Remember that the Z80 has an alternate (or prime - ') set of registers, so that all-in-all, it compares favourably with the 8086. The lower byte of the Flag Register on the 8086 corresponds with the F-reg on the Z80 exactly.

The General Registers on the 8086 can be programmed as either a 16-bit or two 8-bit registers ( High and Low byte). This provides a very flexible set of registers for the programmer to use. Note that the same facility exists on the Z80 except with the Accumulator and the Index registers.

I hope that this small contribution may assist some readers in understanding the Intel microprocessors used in PC's. I hope that it also encourages VZ Users to persevere with Assembly language programming as it is transferable to other chips. Also, let Harry know if you want further discussions on the PC in VZDU.

(And yes, this was produced on a 486 graphics work-station using Word Perfect 5.1 and a laser printer)

# ADVENTURE GAMES-MODULAR ADVENTURES

Firstly I must apologise to those that have been following the series for the delay in coming up with this final part of the series. I had nearly finished writing it when I sat down for another writing session only to find a screenful of garbage instead of what I had written. Unfortunately for me I hadn't bothered to make any back up copies, had erased all of my previous progress and had not printed out anything I had typed in. (Not exactly the best practice, especially when writing adventures because of the huge amount of work that is lost if a catastrophe occurs. It is always worthwhile to keep a back up copy or at least VERIFY your program - you could always make yourself a cup of coffee or take the dog for a walk while you are waiting.) As a result of the above disaster, this part was delayed by an edition.

The following method is somewhat difficult so beginners should not plan to write their adventures in this way unless they are confident they can get it to work:

As I have mentioned several times during this series, one of the major problems with VZ adventure writing is the restriction on memory. One way of overcoming this is to split the adventure into a series of separate program modules which are not all in memory at the same time. As the player completes each part of the adventure, some information (such as what the player is carrying, STrength or any other attributes the character may have,as well as some of the actions the player has carried out - recorded in the F array) needs to be carried from one part of the adventure to the next. This is done by saving these to tape or disk, or placing them in high memory (which happens anyway if you are using a tape save - see VZDU #28 - and is not altered even if you type NEW or load another program) when the player completes the first section, and loading them again after the next part of the adventure has been loaded.

Firstly you should have the plot of your adventure so that once players complete one section and go on to the next, there is no way that they can return to the original. Also it would be useful if they lost objects that no longer have any use in the adventure, because otherwise all of the following modules would have to deal with the player having these objects, and trying to carry out actions using them, which would be a waste of time and memory. Possible scenarios you could have is a rockfall in which objects can be lost that occurs when the player enters the new section and cannot be cleared away, or a fast flowing river which the player must swim, with some of the things being carried floating away in the current, but unable to be swum again because the player is too tired to do so.

Also you should plan your arrays accordingly, so that any objects that the player does get to take into the new section are the first to occur in the C array, and that relevant flags are also the first in the F array (except, of course, they must occur after any flags which show whether objects are visible or not. This is so that "useless" flags and elements of the C array can be used again in the new section for other purposes.

When the player completes the section you should have a message telling them that they have completed it and asking if they wish to save their progress. You should also set a flag here to indicate that the section is completed. This is so that each module knows that it is loading correct data, and not data that is supposed to be used for another module. The data should then be saved to tape in the normal manner described in VZDU#28, or at least loaded into high memory. (If you can't be bothered making the routine do this, you can just use the normal SAVE routine. Of course, if the record button isn't pressed, nothing is going to be saved.) If you like you could also put in a line prompting the player to insert the program tape and press play, and follow it with this line:

```
POKE 31070,42 :CRUN "SECTION 2":'filename of next program module
```

Because of the way the LOAD and SAVE routines are written, this POKE will trick the next part of the program into thinking it has already loaded data off the tape and into high memory, and will save the player the bother of having to load the data file (or even save it onto tape for that matter) provided that the previous program has placed the data into high memory.

When you are writing any modules following the first one, you will encounter a small problem - you can't test to see if you program works properly unless you have loaded data from earlier sections but any tape functions can't be placed in the program until last because you need to know what the value of the End Of Basic pointer is when the program is finished. Until the tape functions are installed, place a line at the start of your program which sets the contents of the F and C arrays, etc at values which are typical for the player having completed the previous section.

eg

```
1 FORI=1TO6:C(I)=0:NEXT:F(20)=5:F(21)=1:S=60:W=13
```

When you are ready to install the tape functions, you should delete this line.

Once again because when we try to LOAD the progress data, we adjust the pointers and the use of the CRUN command causes the main program to restart. Because of this we must restore the pointers to their proper values at the start of the program:

```
5 POKE 30884,233:POKE30885,122: 'Start Of Basic
6 POKE 30969,112:POKE30970,147: 'End Of Basic. Use Values Correct
                                 for your program.
7 POKE 30971,112:POKE30972,147: 'Same comment applies
8 POKE 30973,112:POKE30974,147: 'Ditto
9 POKE 30897,255:POKE30898,205: 'Lowered value of Top Of Memory
10 POKE30880,205:POKE30881,205: 'Top Of Stack (TOM minus 50)
15 CLEAR 700: 'Set aside string space and stabilise pointers
```

When the program starts, it needs to know if the data it is supposed to use is already in high memory or if it needs to load it. This information is kept in address 31070.

```
20 IF PEEK(31070) <> 42 THENGOTO7000
25 POKE 31070,0
```

The program this time can't run unless it has some data to work with - if it hasn't it branches directly to the LOAD routine at 7000. This value in 31070 is reset so that when the program is next run again the player has the option of loading a different set of data to what is currently in memory. The LOAD routine is the standard one as given in VZDU#28.

Next the program must check to see if what has been loaded in fact belongs to this program, by checking the value of the flag we altered when the player completed the previous section. This is done in the demonstration program by directly checking the memory location where this flag was saved.

```
25 IFPEEK(-12567)<>3ANDPEEK(-12567)<>4THENGOTO6000
```

If an incorrect file has been loaded then the program restarts after this message:

```
6000 CLS:PRINT "CHEAT! YOU HAVEN'T REALLY GOT"
6010 PRINT "THIS FAR IN THE GAME."
6020 PRINT "A ONE HUNDRED THOUSAND MILLION"
6030 PRINT "TONNE JAR OF VEGEMITE FALLS OUT"
6040 PRINT "OF THE SKY AND SQUASHES YOU"
6050 PRINT "FLAT.": GOSUB 890: '(Press a key to continue)
6060 RUN
```

Next the program initialises a number of variables, including the number of verbs, nouns and gettable objects, the list of verbs and nouns, the weights of all of the objects, and the player's starting location. It also places any objects that may be found in this section into their correct places and sets their flags to 1 if they are "invisible."

Once this has been done the program now needs to know whether the data has been loaded from a file saved after the end of the last section, or from a file saved after the player has already begun this section. The same flag as above is used, but with a different value. If the player is starting this section for the first time, just the objects that may be carried from the last section into this one are loaded into the C array. If the player is not carrying one of these particular objects, it is placed "out of reach", by changing the value of that particular element of the C array to a high number. Also only the important flag values are placed in the F array - the rest are ignored. A message is also placed in R$ telling the player what has happened. The value of the flag saying which section the player is up to is also altered.

```
27 IFPEEK(-12567)=4THEN70
30 W=PEEK(-12568):S=PEEK(-12569):F(38)=4:F(25)=PEEK(-12580)
40 FORI=1TO6:C(I)=PEEK(52969-65536+I):IFC(I)<>0THENC(I)=26
50 NEXT
60 R$="JUNK FALLS FROM THE ROOF BLOCKING YOUR PATH BACK.YOU LOSE"
65 R$=R$+" SOME OF YOUR THINGS IN THE JUNK.":GOTO140
```

If data saved from within this section is loaded, the file is just loaded straight into the C and F arrays.

```
70 FORI=1TO38:F(I)=PEEK(52931-65536+I):NEXT
80 FORI=1TO9:C(I)=PEEK(-12567+I):NEXT:R=F(35):S=F(36):W=F(37)
```

The next line is line 140, where the main loop of the program starts, by displaying the player's environment. This is no different to an ordinary adventure.

Also no different to an ordinary adventure is the SAVE routine which begins at line 7100 in the demo program. Don't forget to place your own value of EOB in line 7180.

This just about finishes off the series. Don't worry if you don't understand much of this last part of the series - it is an advanced topic, and not needed unless you plan to write really long adventures. People who have borrowed the listings from the demonstration adventure will have noticed that section two contains only four rooms and not a great deal of action. This is because I was not at all confident of getting this to work, and would be able to tack that part onto the end of the main part of the adventure if I needed to.

If you want to borrow the listings of the adventure they are available as a printout only, so people would bother to type them in (and hopefully learn something). However if you have already written an adventure (your own work) and send it in to be published in the VZDU newsletter or on the Public Domain tape, they will be made available for you on tape or disk.

Some books which you may be interested in borrowing from the VZDU library ( see #31) are The Mystery of Silver Mountain and Island of Secrets by Usborne. These contain listings for you to study (and type in if you wish but both are available Public Domain) as well as a background story and hints for the game. (You will probably find Island of Secrets almost impossible to complete without the book, or at least without cheating.) Another is Fantasy Games, which may be quite difficult to adapt for the VZ but is probably not impossible. Also by Usborne, but not available in the library is Write Your Own Adventure Programs. Although the style they have used to write the program is not the best, it contains some quite useful hints on adventure game design. It also would be useful to investigate books on adventure games for other computers. Although the actual programming may not be 100% compatible with the VZ, they may contain valuable information on design, and may at least give you ideas on new programming approaches that you may not have otherwise thought of. Many of my ideas for the programming of the adventure used in this series as well as Merkfruit came from a book called Adventure Games for the Electron, by A.J. Bradbury. It was out of print when I bought it for a dollar several years ago, so I don't know how it could be obtained now.

Finally, if you have any problems with this series, you may contact me at the address given in the first part of the series. As I am now at university and not home very often and have a large workload most of the time when I am, I may take some time to reply, but I will do my best to do so as soon as possible.

# STILL SCREAMING

"Oh me, oh my, oh you,
Whatever shall I do?
Hallelujah!
My problem is peculiar!"

All Lonny Donegan was worried about was the flavour of his chewing-gum.... small bikkies alongside MY problems!!

WHERE DO I BEGIN??

First of all I discovered that my newly acquired second disk drive was a "disk-monster". It chewed-up the information on the disks, scrambled it around and then spat it out as "I/O ERRORS". I was in the middle of rationalising my disk space, putting all the part-filled discs together to get spares to use over the Christmas Break.

Such plans we had for the Break. The boys were going to take on the Watsons and McLeans in the bid for High-score supremacy; Tim was going to finally master Adventure Writing; I was going to learn how to use the graphics on this machine so that Mitch could draw on the screen instead of on innumerable bits of paper scattered from one horizon to the next; and finally, for myself, I was going to master the new 3.3 Patch Word Processor program I had just bought.

Great plans, weren't they? But here I sat with a DISK-GOBBLING MONSTER and the disks we needed full of garbage!!

Well, it turned out that the disk drive wasn't a monster at all. I returned it to XXX, its previous owner. He did everything he could possibly think of to upset it, but it behaved with the utmost decorum.

At least I could use my second disk drive without fearing loss of fingers. Something else I found out. You know how it says in the book that after copying to disk you <DIR> and when the name shows up you have verified that the program is on the disk? Don't you believe it. All it shows for sure is that the directory has been copied onto the directory track (00) on the disk. I have about eight disks now with the (00) track intact and only half the programs actually on the disk. On the other hand, I also have several disks with nothing on the directory track, but full of programs on the disk!

How do I know this for sure? I looked with "Disk Doctor". I also resorted to typing up and trying out such utilities from the newsletters as "Check Disk", "Retrieve" and "Formatt", using an extended DOS program to help with addresses etc. But whatever I have done to my disks has defied even these concerted efforts.

What now, you ask? Now I SCREAM, sit down and start to type ...

.........D E A R   H A R R .....

# AMAZING ADVENTURE

BY PETER ROSS

```
0 CLS
1 POKE31058,243:POKE31059,1:POKE31060,100:POKE31061,0
2 POKE31062,33:POKE31063,20:POKE31064,0:POKE31065,205
3 POKE31066,92:POKE31067,52:POKE31068,201:POKE30862,82
4 POKE30863,121:CLS
5 GOSUB10:GOTO30
10 CLS:PRINT:PRINT@45,"THE":PRINT@71,"AMAZING ADVENTURE":PRINT
20 PRINT"================================";:POKE31063,75:
25 X=USR(0):RETURN
30 PRINT"WELCOME TO ORANUS! YOU HAVE BEEN";
40 PRINT"BLASTED INTO THIS UNIVERSE BY"
50 PRINT"A VERY LARGE BOLT OF LIGHTNING."
55 FORA=1TO65:POKE31063,A:X=USR(0):NEXT
60 PRINT"YOUR MISSION IS TO FIND THE"
70 PRINT"PRICELESS JEWELS OF ORANUS. AN"
80 PRINT"OLD LEGEND SAYS THAT THE JEWELS"
90 PRINT"ARE KEPT IN A HUGE CASTLE BEYOND";
100 PRINT"A LARGE DOOR. GOOD LUCK"
120 PRINT:PRINT"PRESS RETURN TO CONTINUE";:INPUTA$:
130 IFA$="Q"ORA$="QUIT"THEN150
140 GOTO180
150 CLS:GOSUB10:PRINT"       CHICKEN!-CHICKEN!
160 PRINT:PRINT:PRINT:INPUT"PRESS RETURN FOR ANOTHER GO";A$
170 RUN
180 GOSUB10:PRINT"YOU ARE BY A TAR ROAD. YOU CAN"
190 PRINT"SEE A TOWN AHEAD, YOU CAN ALSO
200 PRINT"SEE A RING ON THE GROUND.":GOSUB6500
220 INPUT"<GET RING> OR <ENTER TOWN>";A$
250 IFA$="GET RING"  THEN280
260 IFA$="ENTER TOWN"THEN440ELSEGOSUB6600:GOTO180
280 GOSUB10:PRINT"YOUR NOT INERESTED IN THE TOWN"
290 PRINT"BUT YOU ARE INTERESTED IN THE"
300 PRINT"RING ON THE GROUND.":GOSUB6500
320 INPUT"<EXAMINE RING> OR <ENTER TOWN>";A$
350 IFA$="EXAMINE RING"THEN380
360 IFA$="ENTER TOWN"THEN440ELSEGOSUB6600:GOTO280
380 GOSUB10:PRINT"YOU LOOK VERY CLOSELY AT THE
390 PRINT"RING NOT NOTICING THAT A LARGE
400 PRINT"TRUCK IS COMING UP BEHIND YOU.
410 PRINT"SPLAT..........................";
420 PRINT"PRESS RETURN TO CONTINUE";:INPUTA$
430 GOSUB10:PRINT:PRINT"        YOU ARE DEAD!":GOTO160
440 GOSUB10:PRINT"YOU HAVE JUST ENTERED THE TOWN"
450 PRINT"YOU ARE VERY HUNGRY.:GOSUB6500
470 PRINT"<ENTER HAMBURGER SHOP> , <DON'T ";
480 PRINT"EAT> OR <ENTER PIZZA SHOP>
490 INPUTA$
500 IFA$="DON'T EAT"THEN550
510 IFA$="ENTER HAMBURGER SHOP"THEN1120
520 IFA$="ENTER PIZZA SHOP"THEN1310
540 GOSUB6600:GOTO440
550 GOSUB10:PRINT"YOU DON'T FEEL LIKE EATING MUCH"
560 PRINT"TODAY SO YOU HEAD OF ON YOUR
570 PRINT"ADVENTURE. WHILE YOU ARE WALKING";
580 PRINT"DOWN AN ALLEY A PUNK JUMPS OUT"
590 PRINT"FROM A WINDOW HE HAS A KNIFE IN"
600 PRINT"HIS HAND.":GOSUB6500
610 PRINT"<FIGHT PUNK> OR <RUN AWAY>
620 INPUTA$
640 IFA$="RUN AWAY"THEN670
650 IFA$="FIGHT PUNK"THEN920:GOSUB6600:GOTO550
670 GOSUB10:PRINT"YOU DECIDE TO RUN AWAY FROM THE"
680 PRINT"PUNK. BUT JUST AS YOU WERE
690 PRINT"TURNING THE CORNER THE PUNK
700 PRINT"THROWS HIS KNIFE.":GOSUB6500
720 PRINT"<TURN CORNER> OR <CATCH KNIFE>
730 INPUTA$
750 IFA$="TURN CORNER"THEN780
760 IFA$="CATCH KNIFE"THEN820
770 GOSUB6600:GOTO670
780 GOSUB10:PRINT"YOU WANT TO TURN THE CORNER BUT"
790 PRINT"YOU TRIP OVER YOUR SHOE-LACES.
800 PRINT"THE KNIFE HITS YOU IN THE BACK..";
810 GOTO 420
820 GOSUB10:PRINT"YOU CAUGHT THE KNIFE AND THROW"
830 PRINT"IT BACK AT THE PUNK. IT HITS HIM";
840 PRINT"IN THE BACK OF HIS HEAD.
850 PRINT"        THE PUNK IS DEAD!"
860 PRINT:PRINT"PRESS RETURN TO CONTINUE";:INPUTA$
870 GOSUB10:PRINT"BUT MORE PUNKS JUMP OUT THE
880 PRINT"WINDOW. AND THIS TIME THEY DON'T";
890 PRINT"HAVE KNIFES THEY HAVE GUNS!
900 PRINT:PRINT"BANG...........................";
910 GOTO420
920 GOSUB10:PRINT"YOU DECIDE TO BELT UP THE PUNK"
930 PRINT"BUT YOU HAVE NO WEAPONS. YOU CAN";
940 A=RND(4):IFA=1THENB$="PIPE"
950 IFA=2THENB$="KNIFE"
960 IFA=3THENB$="STICK"
970 IFA=4THENB$="BRICK"
980 PRINT"SEE A ";B$" ON THE GROUND.
990 PRINT"WHAT DO YOU WANT TO DO"
1000 PRINT"<GET WEAPON> OR <KICK PUNK>
1010 INPUTA$
1030 IFA$="KICK PUNK"THEN2550
1040 IFA$="GET WEAPON"THENGOTO1060
1050 GOSUB6600:GOTO920
1060 GOSUB10:PRINT"YOU GET THE ";A$;". AND"
1070 PRINT"START HITTING THE PUNK WITH IT..";
1080 SOUND1,6;9,1:A=RND(6)
1090 IFA=3ORA=2THENPRINT"ITS AMAZING YOU SURVIVED THE"ELSE1110
1100 PRINT"FIGHT AND......................";:GOTO850
1110 PRINT"BUT YOU DIDN'T SURVIVE THE FIGHT":GOTO420
1120 GOSUB10:PRINT"YOU ENTER THE HAMBURGER SHOP.
```

```
1130 PRINT"YOU WANT TO ORDER A CHEESEBURGER";
1140 PRINT"BUT THERE IS A HOLD UP HERE."
1150 GOSUB6500
1160 PRINT"<EXIT HAMBURGER SHOP> OR <PUT"
1170 PRINT"HANDS UP>":INPUTA$
1190 IFA$="EXIT HAMBURGER SHOP"THEN1220
1200 IFA$="PUT HANDS UP"THEN1260
1210 GOSUB6600:GOTO1120
1220 GOSUB10:PRINT"YOU EXIT THE HAMBURGER SHOP. BUT";
1230 PRINT"ONE OF THE ROBBERS SEES YOU  "
1240 PRINT"LEAVING. HE FIRES HIS GUN.......";
1250 GOTO 420
1260 GOSUB10:PRINT"THE ROBBERS LEAVE A FEW SECONDS
1270 PRINT"LATER. AFTER THEY LEAVE YOU EXIT";
1280 PRINT"THE HAMBURGER SHOP AND DECIDE TO";
1290 PRINT"ENTER THE PIZZA SHOP."
1300 PRINT"PRESS RETURN TO CONTINUE";:INPUTA$
1310 GOSUB10:PRINT"YOU ENTER THE PIZZA SHOP. THEY
1320 PRINT"HAVE TWO SPECIALS ON PIZZA TODAY";
1330 PRINT"CHEESE PIZZA OR MEXICAN PIZZA"
1340 GOSUB6500
1350 PRINT"<GET MEXICAN PIZZA> OR <GET  "
1360 PRINT"CHEESE PIZZA>
1370 INPUTA$
1390 IFA$="GET MEXICAN PIZZA"THEN1420
1400 IFA$="GET CHEESE PIZZA"THEN1480:GOSUB6600:GOTO1310
1420 GOSUB10:PRINT"YOU DECIDE TO ORDER A MEXICAN"
1430 PRINT"PIZZA.YOU EAT THE PIZZA AND WALK";
1440 PRINT"OUTSIDE. YOU FEEL VERY DIZZY????";
1450 PRINT"YOU SAY TO YOURSELF 'POISON' AND";
1460 PRINT"THEN YOU FALL TO THE GROUND.....";
1470 PRINT"PRESS RETURN TO CONTINUE";:INPUTA$:GOTO430
1480 GOSUB10:PRINT"YOU ORDER A CHEESE PIZZA AND EAT";
1490 PRINT"IT STRAIT AWAY! YOU FIND A KEY"
1500 PRINT"IN THE BOTTOM OF THE TRAY. YOU"
1510 PRINT"GET THE KEY AND PUT IT IN YOUR"
1520 PRINT"POCKET.YOU EXIT THE PIZZA SHOP"
1530 PRINT"AND HEAD OF ON YOUR ADVENTURE."
1540 PRINT:PRINT"PRESS RETURN TO CONTINUE";:INPUTA$
1550 GOSUB10:PRINT"YOU HAVE COME TO A DIRT TRACK "
1560 PRINT"YOU CAN SEE A ROCK HERE."
1570 GOSUB6500
1580 PRINT"<EXAMINE ROCK> , <GET ROCK> OR
1590 PRINT"<KEEP GOING>
1600 INPUTA$
1610 IFA$="EXAMINE ROCK"THEN1710
1620 IFA$="GET ROCK"THEN1660
1630 IFA$="KEEP GOING"THEN1760:GOSUB6600:GOTO1550
1660 GOSUB10:PRINT"YOU WANT TO PICK UP THE ROCK BUT";
1670 PRINT"YOU DID'T NOTICE THAT THERE WAS"
1680 PRINT"A RED BACK SPIDER ON IT. CHOMP"
1690 PRINT"IT BITES OF YOUR MIDDLE FINGER!";
1700 PRINT:GOTO420
1710 GOSUB10:PRINT"YOU EXAMINE THE ROCK. BUT YOU
1720 PRINT"DON'T SEE ANYTHING SPECIAL ABOUT";
1730 PRINT"THE ROCK. YOU DECIDE TO GET BACK";
1740 PRINT"TO YOUR ADVENTURE.":PRINT
1750 PRINT"PRESS RETURN TO CONTINUE";:INPUTA$
1760 GOSUB10:PRINT"YOU KEEP GOING ON YOUR ADVENTURE";
1770 PRINT"YOU HAVE COME TO A LARGE HOUSE."
1780 PRINT"THERE IS A GATE HERE AND IT IS'T";
1790 PRINT"LOCKED.":GOSUB6500
1800 PRINT"<OPEN GATE> OR <EXAMINE HOUSE>"
1810 INPUTA$
1830 IFA$="OPEN GATE"THEN1900
1840 IFA$="EXAMINE GATE"THEN1860:GOSUB6600:GOTO1760
1860 GOSUB10:PRINT"YOU EXAMINE THE HOUSE BUT YOU"
1870 PRINT"DON'T SEE ANYTHING SPECIAL ABOUT";
1880 PRINT"IT.":PRINT
1890 PRINT"PRESS RETURN TO CONTINUE";:INPUTA$
1900 GOSUB10:PRINT"YOU OPEN THE GATE. IT IS VERY"
1910 PRINT"RUSTY AND LOOKS LIKE IT HASN'T "
1920 PRINT"HAD ANY OIL FOR YEARS! YOU CAN"
1930 PRINT"SEE A PATH THAT LOOKS LIKE IT
1940 PRINT"GOES RIGHT AROUND THE HOUSE."
1950 GOSUB6500
1960 PRINT"<WALK PATH> OR <ENTER HOUSE> "
1970 INPUTA$
1990 IFA$="WALK PATH"THEN2020
2000 IFA$="ENTER HOUSE"THEN2100:GOSUB6600:GOTO1900
2020 GOSUB10:PRINT"YOU WANT TO WALK THE PATH FIRST"
2030 PRINT"BEFORE YOU ENTER THE HOUSE. YOU"
2040 PRINT"KEEP WALKING ALONG THE PATH BUT ";
2050 PRINT"YOU FALL OVER A CLIFF AND DIE OF";
2060 PRINT"MASSIVE INTERNAL INJURIES!"
2070 PRINT
2080 PRINT"PRESS RETURN TO CONTINUE";:INPUTA$
2090 GOTO430
2100 GOSUB10:PRINT"YOU ENTER THE HOUSE THE FRONT "
2110 PRINT"DOOR SLAMS SHUT BEHIND YOU! ALL
2120 PRINT"YOU CAN SEE IS THE FOUR WALLS"
2130 PRINT"AROUND YOU AND THE BACK DOOR."
2140 GOSUB6500
2150 PRINT"<OPEN DOOR> OR <UNLOCK DOOR>
2160 INPUTA$
2180 IFA$="OPEN DOOR"THEN2310
2190 IFA$="UNLOCK DOOR"THEN2340:GOSUB6600:GOTO2100
2310 GOSUB10:PRINT"YOU CAN'T OPEN THE DOOR BECAUSE"
2320 PRINT"IT'S LOCKED.":PRINT
2330 PRINT"PRESS RETURN TO CONTINUE";:INPUTA$
2340 GOSUB10:PRINT"YOU UNLOCK THE DOOR WITH THE KEY";
2350 PRINT"YOU FOUND IN THE PIZZA SHOP!"
2360 GOSUB6500
2370 PRINT"<EXIT HOUSE> OR <EXAMINE HOUSE>
2380 INPUTA$
2400 IFA$="EXAMINE HOUSE"THEN2430
2410 IFA$="EXIT HOUSE"THEN2540:GOSUB6600:GOTO2340
2430 GOSUB10:PRINT"YOU EXAMINE THE HOUSE. YOU CAN"
2440 PRINT"SEE A TIN OF GLUE. WHAT DO YOU"
2450 PRINT"WANT TO DO? <DRINK GLUE> OR"
2460 PRINT"<EXIT HOUSE>":INPUTA$
2480 IFA$="DRINK GLUE"THEN2510
2490 IFA$="EXIT HOUSE"THEN2540:GOSUB6600:GOTO2430
2510 GOSUB10:PRINT"YOU DRINK THE GLUE! AND NOW YOU"
2520 PRINT"CAN'T BREATH BECAUSE IT HAS
2530 PRINT"BLOCKED YOUR LUNGS!":PRINT:GOTO420
2540 GOSUB10:PRINT"YOU EXIT THE HOUSE AND HEAD OF":GOTO2600
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2550 GOSUB10:PRINT"YOU KICK THE PUNK. HE FALLS TO"
2560 PRINT"THE GROUND! YOU RUN AROUND THE"
2570 PRINT"CORNER AND DECIDE TO ENTER THE"
2580 PRINT"HAMBURGER SHOP.":PRINT
2590 PRINT"PRESS RETURN TO CONTINUE";:INPUTA$:GOTO1120
2600 PRINT"ON YOUR AMAZING ADVENTURE. YOU "
2610 PRINT"HAVE COME TO A STONE ARCH WAY."
2620 PRINT"YOU CAN SEE A PATH BEHIND YOU "
2630 PRINT"AND A DIRT ROAD IN FRONT. "
2640 GOSUB6500
2650 PRINT"<GO FORWARD> OR <GO BACKWARDS>
2660 INPUTA$
2680 IFA$="GO BACKWARDS"THEN2710
2690 IFA$="GO FORWARD"THEN2730:GOSUB6600:GOTO2540
2710 GOSUB10:PRINT"YOU START WALKING THE PATH BUT"
2720 GOTO2050
2730 GOSUB10:PRINT"YOU DECIDE TO WALK FORWARD ONTO"
2740 PRINT"THE DIRT ROAD YOU CAN SEE A LOT"
2750 PRINT"OF CARS GOING PAST. WHAT DO YOU
2760 PRINT"WANT TO DO? <HITCH RIDE> OR
2770 PRINT"<JUST WALK>"
2780 INPUTA$
2800 IFA$="JUST WALK"THEN2830
2810 IFA$="HITCH RIDE"THEN2900:GOSUB6600:GOTO2730
2830 GOSUB10:PRINT"YOU WALK ALONG A OLD TRACK THAT"
2840 PRINT"IS BESIDE THE DIRT ROAD BUT WHEN";
2850 PRINT"YOU CROSS THE BRIDGE THE TRACK "
2860 PRINT"RUNS OUT WHICH FORCES YOU TO "
2870 PRINT"WALK ON THE ROAD. A CAR COMES UP";
2880 PRINT"BEHIND YOU."
2890 PRINT"SPLAT..........................";:GOTO420
2900 GOSUB10:PRINT"YOU DECIDE TO HITCH A RIDE "
2910 PRINT"BECAUSE YOUR LEGS ARE TIRED FROM";
2920 PRINT"WALKING. YOU WAVE YOUR THUMB IN"
2930 PRINT"THE AIR. SECONDS LATER A CAR"
2940 PRINT"PULLS OVER ON THE SIDE OF THE "
2950 PRINT"ROAD THE DRIVER SAYS 'WOULD YOU"
2960 PRINT"LIKE A HITCH?' WHAT DO YOU WANT"
2970 PRINT"TO DO? <SAY YES> OR <SAY NO> "
2980 INPUTA$
3000 IFA$="SAY NO"THEN 2830
3010 IFA$="SAY YES"THEN3030:GOSUB6600:GOTO2900
```

# THE HIGH SCORES

| GAME | SCORE | LEVEL | HOLDER |
|---|---|---|---|
| DAWN PATROL | 78100 | | PAUL FRANTZ |
| CRASH-4 | 881 | 4 | MATHTHEW McLEAN |
| CRASH-2 | 1899 | 2 | PETER WATSON |
| DIG OUT | 52500 | | KENLEY McLEAN |
| HAMBURGER SAM | 51000 | | ROGER McLEAN |
| LADDER CHALLENGE | 23970 | | PETER WATSON |
| KAMIKAZE | 113410 | | PETER WATSON |
| TEN PIN BOWLS | 255 | | PETER WATSON |
| VZ INVADERS | 30160 | | PETER WATSON |
| GALAXON | 328460 | | MATHEW McLEAN |
| PENGUIN | 3610 | | PETER WATSON |
| LUNAR LANDER | 61000 | 1 | PETER WATSON |
| LUNAR LANDER | 7300 | 5 | PETER WATSON |
| SUPER SNAKE | 1918 | | PETER WATSON |
| MAZE OF ARGON | 78306 | | PETER WATSON |
| ASTEROIDS | 110000 | | PETER WATSON |
| CIRCUS | 3180 | | MATHEW McLEAN |
| PANIK | 11540 | | PETER WATSON |
| HOPPY | 25550 | | MATHEW McLEAN |
| GHOST BUSTER | 23400 | | CHRIS McLEAN |
| KNIGHTS & DRAGONS | 5300 | EASY | PETER WATSON |
| KNIGHTS & DRAGONS | 1200 | EXPERT | PETER WATSON |
| SPACE RAM | 1441 | | MATHEW McLEAN |
| MISSILE ATTACK | 520000 | | HERU McLEAN |
| BUST OUT | 3940 | | PETER WATSON |
| PLANET PATROL | 1177 | | PETER WATSON |
| DEFENCE PENETRATOR | 1563 | | PETER WATSON |
| PHAROAH'S CURSE | 153 | 5 | PETER WATSON |
| STAR BLASTER | 835 | 1 | PETER WATSON |
| STAR BLASTER | 683 | 2 | TIM PENDLEBURY |
| STAR BLASTER | 625 | 3 | TIM PEMDLEBURY |
| STAR BLASTER | 419 | 4 | TIM PENDLEBURY |
| STAR BLASTER | 252 | 5 | PETER WATSON |

# WELCOME TO THE GAMES COLUMN

m Welcome to the games column. My name is Tim Pendlebury I am a year 11 student at Griffith High (N.S.W), and I shall be your games columnist for awhile. This issue I will review Scott La Brun's "Galactic Empires".

You are the Emperor of a small planet, in a star-system of 10 to 15 planets. The aim of the game is to conquer the other 10 to 15 planets. But be warned it's not easy. When the game first starts you are given the choice of one to four players, enter "VZ" for the computer to play. Then you are asked "How many turns?" put in 10 first and just build up later. Warning!! Never play "VZ" against "VZ" as the game takes a turn for the worst, (for you.) Two players is good, four is a bit long and I don't know how to play two players without each other watching each other's moves, as they're supposed to be secret.

If you're lucky your planet is a class 4 planet and its resources will build you one starship per so many turns. You start with maybe five to six starships (? I forget the exact number) and the more planets you conquer the more your resources build. Your first move should take about 2 to 3 turns. While this is happening never leave your planet without starships as your resources cease and so do your starships.

Now this is the "uneasy" bit, if say you want to send 6 starships to the planet "A", but the planet "A" is on the other side of the screen to yours, it takes to turn 52 to get there. That means you have to wait 52 turns and innumerable "please give me so many more turns please". (No it's not a mistake I did say "please" twice) then when you get there you find the native ships outnumber you and destroy your ships.

It's a good idea to start with the closest planet and work your way outwards. During the game you can leave messages, eg (the computer LOVES this one) "I will defeat you, you organic!!". But be polite as your mother might be watching. If you're married, don't insult the wife please.

Scot La Brun, who was the editor of VZ DOWN UNDER before H.H, wrote several of the games in our games library. I don't know if this is his best but it is an enjoyable game. I certainly enjoyed it. Which of Scot's games do you like best?

This is all from me. If you have any reviews, queries, or hints for the next issue please send to :

Tim Pendlebury
P.O.Box 917
Griffith, N.S.W. 2680.

BUT ALL HIGH SCORES TO HARRY PLEASE.

The heading on this month's games column was designed by my brother, Mitch, using the "Sketches" joystick drawing program from the games library. If anyone would like to try designing a heading, send it to me. I will use any I get for the column.

PS All correspondence will be acknowledged in the Games Column, but if you want an earlier reply enclose a stamped addressed envelope with your letter and I will write to you as well.

# THE TRADING POST

We are able to get onto a source of IBM compatiable computers that are being traded in or disposed of to get more powerful models. They are mostly PCs and XTs with a few ATs.

These are selling at prices ranging from $300 to $500. Some have hard disks, some one or two floppies either 3.5 ir 5.25.

We will obtain these machines for any members interested and check them over. Any we send out will be working correctly. We can't give a guarantee other than that we won't see you stuck with a LEMON. We can service them here. (see the article on IBM). Some will have programs with them; most will have DOS There are both COLOR and B&W. All can be upgraded later. By that I mean that an XT with 512K memory and 1 floppy drive and B&W monitor, can be upgraded to VGA with hard drive and 2 floppies and up to 6 meg. of memory. The B&W config. will run on a TV that has an input for a VCR, so you would not need a monitor

However if that is the configureation you are wanting now it is better to buy a 286 at about $1700. These are very worthwhile machines to get started with.

If you are interested, let me know the config. you would like and I'll see what is offering. I have an AT running here, and you are quite welcome to drop in and see what they are made of.

# I B M FACTS

Just a few home truths about the 'mighty' IBM. It is truly named. It stands for 'I'VE BEEN MISLED'.

Don't get the idea that the VZ is finished. It is true that parts have run out, and there will be few if any Arcade style programs to come out. The ZX80 computer marketed by Sinclair was one of the first small computers on the market, and there are still quite a few of them still in use. They were on the market before IBM's first PC. The VZ has nothing to apologize for. The VZ using assembly language can hold it's own with machines running at similar speed, such as the XT and the Apples and Commodores. Don't compare it with the latest 386 and 486 models running at perhaps 10 times the speed, and with 32 bit buses.

This article is to give you some idea of the IBM compatiables and perhaps explode some myths.

There are a range of these, starting from the first Personal Computer (PC) through the XT; AT; 286; 386 or 386DX; 386SX;486DX; 486SX and i486.XT=extended technology and added Graphics to the PC. AT=advanced technology. Quite a range, and each one gaining a little on the previous one. The PC used the 8088 CPU or chip, and had a speed of about 4 meg Hertz (Mh) (about the same as the VZ.) The XT used the 8088 or 8086 and ran up to about 6Mh.The gain was speed. The AT used the 80286 chip and ran at 10Mh. Not only a gain in speed, but whereas the 8088 and 8086 chips can only make use of 1 Megabyte of memory the 80286 can use up to 8 Megabytes (Megs), However there were difficulties in the circuitry and the extra memory was not of much use. The next was the 286 which is the 80286 chip, using up to 8 meg of memory and running at speed up to 16-20 Mh. The 386 using the 80386 chip runs faster still, up to 33 Mh and has a memory capacity of 1 gigabyte, and has programs available to make use of it. WINDOWS and Computer Aided Design can make use of all that memory and more. The 386 SX is the same chip as the 386DX but whilst it is a 32 bit processor it only has 16 bit Bus, which limits some of its activities. The 486 is the super chip at present, but the 586 is on the drawing board. IBM also has a range of PS/2 and lately PS/1 computers. The PS/1 is only a home computer andnot meant for serious work, and is very limited in expansion. The PS/2 range goes from PS/2-30 which uses the 8086 or 80286 chips. The PS/2-50 and 60 uses the 80386 chip and the PS/2-80 uses the 80486 chip. They use a unique system called MICROCHANNEL which gives them a speed greater than the chip would indicate. How? I don't know.

Quite a range of models! However research shows that about 80% of computers in use are using the 80286 chips. That is the ATs and 286s. When you look at prices you get a fright at the price, but look carefully and you will find they are pushing the 386 and 486 with big hard drives and VGA screens. Look down the other end at the 286s or the ATs. They are doing most of todays work and are priced at $1100 to $1800.

When you bought a VZ you had one package to choose from. With the compatiables you nominate what configuration you want. Altering the configuaration on the IBM is a matter of pluggung in the hardware, or adding or taking out a 'card', and telling the computer you have done so, by typing to the CONFIG. SYS.

There is the keyboard and computer a must. You choose for a momo. screen or a CGA or a VGA. A mono monitor is about $150 and a VGA abut $550. Do you need a hard disk. They are useful but you can work without them. They run between about $400 and $5000. You would need a floppy disk drive. One or two. You can work with one.Breaking that up and starting from a 286 at $1500 less hard drive less VGA plus mono monitor plus floppy comes down to $800. How much did the VZ cost? My first one cost about $900. VZ, cassette recorder, expan memory, disk drive and controller and B&W TV. Add to that the value of inflation since 1983. The IBM will use many different languages, but any skills you aquired on the VZ will still be useful on the IBM. The BASIC you used on the VZ will still work just as well in the IBM. You do have a later version with a lot more commands in it, but if you type your favorite program in it will run. You also get much finer screen display. The VZ had 32 pixels across the screen. The IBM with super vga can have over 1000.

Unless you are going to make use of the 386 or 486 with WINDOWS or CAD or want to run OS/2 or some other high performance, you don't need anything more than the 80286 or even an 8088 or 8086

You would also need an operating system called DOS--Disk Operating System--. That is a program that is loaded into the computer as it is booted. Some portion is resident in memory and the rest is called as needed. You have struck DOS in the VZ, DOS V1.2. Well 3.3 is about what is needed. If you were to use a 386 or 486 then DOS V5 would be the probable choice.

## *OTHER V Z USER GROUPS*

*H.V.V.Z.U.G*
*P.O.Box 161*
*JESMOND NSW.2299.*

DISKMAG. Jason has advised that he has ceased production of this MAG, because of his change of residence. We will hope to see it back with us later. Ed.

*CENT.VIC.COMP.Club*
*24 Breen St.*
*BENDIGO VIC 3550*

*BRISBANE VZUG*
*63 Tingalpa St.*
*WYNUM West. Q'ld. 4178*

*Graeme Bywater*
*P.O.Box 388*
*MORLEY W.A. 6062*

# INFORMATION

Some time ago I was asked by a member if I knew of a good book on Machine(Assembly) language. At the time I did not, but recently I came across a very good one. Although it is for TRS80, it fits the VZ perfectly,both having the Z80 as CPU. It is:-

Z80 ASSEMBLY LANGUAGE PROGRAMMING
By CHRISTOPHER LAMPTON.
A computer literacy skills book.
Published by Franklin Watts. Sydney. ISBN 0-531-04924-8.
Library no. 005 265 ZIL

What makes it so attractive is that it gets you familar with programming, before confusing you with FLAGS, SHIFTS and ROTATE and 2's compliment.

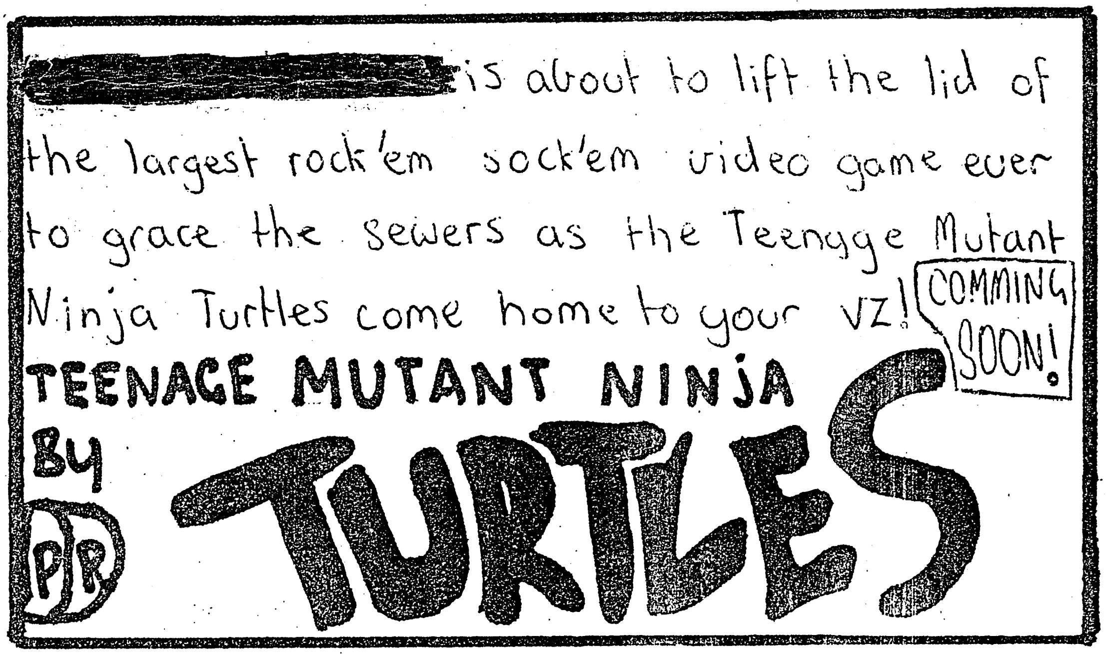
It gets down to 'TIN TACKS' from the start. It compares routines with BASIC. All the above can be learned when you have need for them.

If you want to get well and truely confused, then get ZAC's --PROGRAMMING THE Z80. If you are a programmer with a lot of experience then this is the book that has the lot. But in a very HIBROW way.

Your local library should be able to produce it for you, as they have an interchage arrangement. Box Hill has it on their shelves.

I hope this may be of help to some members.

Ed.



# TRADING POST

EPROMS for EXTENDED DOS. and BASIC
Are available from
Bob Kitch
7 Eurella Str.
KENMORE Q'ld. 4069

#### ####

Wanted to BUY.
V.Z.200. In good order. Good price paid.
Ben Hobson. P.O.Box. 255 Quirindi. N.S.W. 2343.

#### ####

## WANTED TO BUY WANTED TO BUY

## WANTED TO BUY

MICROSOFT BASIC DECODED.
TRS 80 information series II.
By JAMES FORVOUR

Published by I J G. West 11th Str. UPLAND. CA.

Reply Editor.

## OTHER V Z USER GROUPS

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